

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
22 April 2004 (22.04.2004)

PCT

(10) International Publication Number
WO 2004/032936 A1

(51) International Patent Classification⁷: **A61K 31/515**,
49/00, 51/04

(21) International Application Number:
PCT/GB2003/004351

(22) International Filing Date: 8 October 2003 (08.10.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0223249.4 8 October 2002 (08.10.2002) GB

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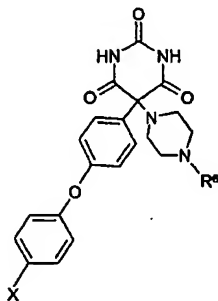
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(54) Title: **IMPROVED IMAGING AGENTS COMPRISING BARBITURIC ACID DERIVATIVES**



(57) **Abstract**—The present invention relates to diagnostic imaging agents for in vivo imaging. The imaging agents comprise a synthetic barbituric acid derivative labelled at the 5-position with an imaging moiety suitable for diagnostic imaging in vivo. The invention also provides pharmaceutical and radiopharmaceutical compositions comprising the imaging agents, together with kits of the preparation of the radiopharmaceuticals. Also described are chelator conjugates of the barbituric acid derivative, which are suitable for the preparation of imaging agents comprising a radioactive or paramagnetic metal ion. The imaging agents are useful for the diagnostic imaging in vivo of various disease states, including atherosclerosis.

Compound	X	R'
2 (prior art)	Br	-CH ₂ CH ₂ OH
3 (prior art)	OCH ₃	-CH ₂ CH ₂ OH
4	I	-CH ₂ CH ₂ OH
5	¹²⁵ I	-CH ₂ CH ₂ OH
6	Br	H
7	Br	-CH ₂ CH ₂ CH ₂ F
8	Br	-CH ₂ CH ₂ CH ₂ ¹⁹ F
9	Br	-(CO)CH ₂ S(CH ₂) ₃ F
10	Br	-(CO)CH ₂ S(CH ₂) ₃ ¹⁹ F
11	Br	-(CO)CH ₂ Cl
12	Br	-CH ₂ CH ₂ NH ₂
13	Br	-CH ₂ CH ₂ Br
14	Br	-CH ₂ CH ₂ CO ₂ H
15	Br	-(CH ₂) ₂ NHCO(CH ₂) ₂ CO ₂ H
16	Br	-(CH ₂) ₂ CO-[Chelator 1]
17	Br	-(CH ₂) ₂ NHCO(CH ₂) ₂ CO-[Chelator 1]
18	SnBu ₃	-CH ₂ CH ₂ OH
19	Br	-C ₆ H ₄ -4-NO ₂
20	Br	-C ₆ H ₄ -4-F
21	Br	-C ₆ H ₄ -4-SiMe ₃
22	Br	-C ₆ H ₄ -4-I



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(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

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